

JAMAICAN LAND SNAILS, 6

BY H. BURRINGTON BAKER

The first paper of this series appeared in the first number of vol. 48, in which the symbols used for localities are explained on pages 7 to 9.

Volvidens (Trifaux) triodon H.B.B., ground [WWF].

Hyalosagda (Lacteoluna) immunda (C.B.A.), ground [EEJ—adult, 8.7×171 (14.9 mm.), $4\frac{1}{2}$ wh.; EJ1, 3 juvenile on rocks]. *H. rufula* (Pfr.), ground [KHwa, MM3b, MN3ac, NMM; smaller than *immunda*]. *H. ptychodes* (Pfr.), ground, incl. typical [EEJ—fresh, EJ3, EJF, MM3b, MN2–3, NM2, NMM—fresh, NMV—fresh, VW2—fresh, WWF] and less angulate Mandeville race (*immunda* auct.) [MM3bc, MN2–3; more rapid whorl-increase than other two].

H. (Aerotrochus) subpyramidalis (C.B.A.), trunk-arboreal [EBL—dead, EEC, EJ2–3, KH, ML2, MM, MN2–3, NM2, WC1, WWC—dead; aestivating shells look like asterisks because of adherent dirt]. *H. perdepressa* (C.B.A.), ground [ENF, KC1—fresh, NM2]; subsp. *brevior* (C.B.A.), ground [KCC, MM1, MM2—fresh, VCMa—fresh]. *H. omissa* (Pils.) [MN3b—fresh].

H. (Microsagda) epistyliulum (C.B.A.), under rocks [MM2–4, VW1, VWS—dead]. *H. angustispira* (C.B.A.), under rocks [EEJ; pl. 8, fig. 8; 2.0×147 (3.0 mm.), umb. 5.2 times, $4\frac{1}{2}$ wh.]. *H. spreata* (C.B.A.), ground and under rocks [EE, EJ, ENF; fig. 7; 4.7×146 (6.9 mm.), umb. 5.6 times, $5\frac{1}{2}$ wh.]. *H. inconspicua* (C.B.A.), ground [KHwa].

H. (Strialuna) haplotrema H.B.B., ground [MN3c]. *H. sincera* (C.B.A.), ground and under rocks, incl. typical [EEC, EJ3, ENF, VCN, VW2—fresh, VWS—fresh; major riblets vague to absent on last whorl] and race *diminuta* (C.B.A.) [EEC, ENF, KC1—fresh, KF—fresh, KH—fresh, MM3, MN3, NMV—fresh, VC, VW2—fresh, VWS; ribs distinct].

H. (Stauroglypta) anthoniana (C.B.A.), ground to deep-in-rocks, incl. typical [NM2, NMV] and paedogenetoid form *invasa* (Pfr.) + *boothiana* auct. [KHwa, ML2, MM, MN, NM, VCmd, VW, WSF, WC1, WWF]. *H. peraffinis* (C.B.A.), mainly ground, also under rocks, incl. typical [ENF, KCC, KF, KH,

ML2, MM3-4, MN3b, VCM, VF, VW1, WSF, WC, WW] and more elevated form (*spretta* auct.) [KCC, KHS, MM3a, VC, WC2, WWF].

H. (s.s.) similis (C.B.A.) [EBL, EJF, EJG, ENF]; subsp. *ambigua* (C.B.A.) [EE]. *H. hollandi* (C.B.A.) [ML1, MM1-3]. *H. arboreoides* (C.B.A.), incl. typical [EBL-dead, EJ1-3] and smaller form [KF, KHS-dead]. *H. simplex* (Pils. & Br.) [MM3a-dead, MM4, MN2-3; often rimate]. *H. osculans* (C.B.A.) [NM2; the only lamellate species]. All species on ground and under rocks, most frequently in disturbed places.

Proserpinula infortunata (Bland), ground [KH, ML2, MM2-4, MN3, NM2, VCMb, VF, VW2, VWS, WV]; subsp. *proserpinula* (Pfr.), ground [NM2b (one shell), WSF, WC1; without lamina but with deeper suture and more cylindrical whorls than *discoidea*]. *P. discoidea* (C.B.A.), ground [EJF, MN1-dead, VW2-dead, VWS]. *P. margaritella* Pils. & Br., ground [MN1, 3ac].

Sagda (Parahelix) epistylioides (Fér.), deep-in-rocks [WSF; shape extremes 18.4×111 (20.4 mm.), $9\frac{1}{4}$ wh., 16.7×141 (23.6 mm.), 9 wh.]. *S. connectans* (C.B.A.), deep-in-rocks, incl. typical [NMV, NM2a; 18.1×141 (25.5 mm.), $9\frac{1}{4}$ wh.] and paedogenetoid race [MN2-3; 11.5×154 (17.7 mm.), $7\frac{3}{4}$ wh.]; subsp. *catadupae* H.B.B., deep-in-rocks [VW2]. *S. occidentalis* H.B.B., deep-in-rocks [WC2-dead, WWC-dead, WWF]. *S. jayana* (C.B.A.), deep-in-rocks [KF most depressed, 18.3×138 (25.3 mm.), $8\frac{1}{4}$ wh.; KH incl. highest, 18.8×106 (20 mm.), $9\frac{1}{4}$ wh.]. *S. adamsiana* Pils. & Br., deep-in-rocks, incl. typical [MM, MN; shape extremes MM3) 25×100 (25 mm.), 10 wh., 24.5×106 (26 mm.), 10 wh., and 18.5×135 (25 mm.), $8\frac{1}{2}$ wh.; paedogenetoid and most depressed at edges of woods and along fences] and race with double columellar lamella (like in *jayana*) [MM3 (rare), ML]. *S. montegoensis* Pils. & Br., ground and under rocks [VCMb; VF usually larger, 20.5×114 (23.8 mm.), 9 wh.]. *S. spei* Pils. & Br., under rocks on hillsides [WC1, WC2-dead]; subsp. *portlandensis* H.B.B., under rocks [EEJ, EJ1, 3b]. *S. anodon* Pils. & Br., bases of and under rocks, flood-plain at base of hills [KC2, KCC-dead]. *S. grandis* Pils. & Br., deep-in-rocks [NMM, NM2, NMV; shape extremes 27.8×113 (31.5 mm.),

9½ wh., 32.4 × 89 (28.7 mm.), 11¼ wh.]. *S. maxima* Simps., deep-in-rocks [WV; 26.6 × 113 (30.1 mm.), 9 wh.]; subsp. *jacobensis* H.B.B., deep-in-rocks, incl. typical [VF] and paedogenetoid race [VW1; 22.4 × 120 (26.8 mm.), 7½ wh.]. Most of the species of *Sagda* vary greatly in relative height and may attain sexual maturity when only half grown.

Sagda (s.s.) *kingswoodi* H.B.B., ground [WC2–dead]. *S. pila* (C.B.A.) [VW2–dead]. *S. triptycha* (Pfr.), rock-bases, edges of woods, incl. typical [NMV–dead; 13.2 × 115 (15.1 mm.), 5¼ wh.] and dwarf race [NM2, NMT–dead; 10.0 × 108 (10.8 mm.), 5½ wh.]. *S. foremaniana* (C.B.A.), rock-fences [MN3]. *S. cookiana* (Gm.), bases of and under rocks, open rock-slides [KHW].

Zaphysema (*Meiophysema*) *lamelliferum* (C.B.A.), fair climber [EBL–fresh, EEJ, EJ; shell hirsute, lamina inconstant].

Z. (s.s.) *macmurrayi* (C.B.A.), deep-in-rocks, [MM4, MN3–fresh, VW2–dead]. *Z. tunicatum* (C.B.A.), fair climber, incl. typical [MN3, NM; hairs not developed on last shell whorl; mantle-edge orange red], small dark race [KHW] and small yellowish race [VW2; mantle-edge orange]. *Z. olivaceum* H.B.B., good rapid climber [EEJ, EJ1, EJ2–3–dead]. *Z. bud-dianum* (C.B.A.), aestivates on ground [VF, VW1, WV, WWF; shell hirsute; mantle-edge spotted with orange]. *Z. mundum* (C.B.A.) (+ *tenerrima* auct.), good climber [M; shell hirsute, usually even on last whorl; mantle-edge reddish].

Thysanophora (*Lyroconus*) *plagioptycha* (Sh.), leaf-arboreal [EEC, MM3]. Apparently the only group of Thysanophorinae in Jamaica.

Pleurodonte (*Lucerna*) *lucerna* (Müll.), mainly ground, incl. typical race [WWC, small coastal subfossils], *fuscolabris* (C.B.A.) appr. *lucerna* [WC2], *fuscolabris* [WWF, WC1, VC–dead], *fuscolabris* slightly appr. *goniasmos* [WSF] and *fuscolabris* appr. *nobilis* [VF]. Subsp. *patina* (C.B.A.), mainly rock-bases, incl. *nobilis* (C.B.A.) appr. *fuscolabris* [WV, VW1], *nobilis* appr. *goniasmos* [VW2] and race near *nobilis* [NMV; typical color and tan-and-white shells, mainly with obsolescent carinae]. Subsp. *goniasmos* (Pils.), ground and rock-bases, incl.

Balaclava race [NM excl. NMV; superficially like Fér. (Hist.: pl. 57, f. 1) but with reduced teeth], more typical stocks [MN, ML1] and *goniasmos* appr. *sublucerna* [MM2-4; MM4 with many high turbinate shells]. Subsp. *semperfluens* Pils. & Br. (= *abnormis* Pfr.?), rock-bases, incl. large race [KH] and topotypes [KF]. Subsp. *sublucerna* (Pils.), ground, incl. large race [KC1, size of *semperfluens*] and typical [KCC]. Subsp. *acuta* (Lam.) + *lamarckii* (Fér.), weak climber, incl. typical *acuta* [ENF, EJ3], *acuta* but often smaller, weakly carinate, with large percentage of broadly rimate shells (as in next two from same region) [EEJ] and race *heteroclites* (Lam.) + *lamarckii*, var. a, the smaller coastal and hilltop race [EJ2-dead; EEC-dead, rimate]. *P. chemnitziana* (Pfr.), weak climber on rocks, incl. typical and rimate forms [EJF], small form [EJ1], a very variable series [EEJ] and Blue Mts. race [EBL; epidermis largely eroded and peristome widely adnate below]. *P. ingens* (C.B.A.), fair rock-climber, incl. mixed *ingens* and *imperfurata* (C.B.A.) [EJ2-dead, EJ1, 3], and lot also containing *indigna* (C.B.A.) [EEJ]. *P. bainbridgei* (Pfr.), deep-in-rocks, incl. typical stock [NMV] and Mandeville race [MM, MN; smallest (diam. 43 mm.) from MM2 and albinos from MN3].

P. (Dentellaria) peracutissima (C.B.A.), fair climber, incl. typical race [ML1-fresh, MM3-4 (light periphery), MN2-3, NMM-fresh, NMT], grading into f. *martiniana* (Pfr.) [MN1] and broadly rimate race of *cara* size [NMV-fresh]. *P. cara* (C.B.A.), incl. 4-toothed, almost imperforate, more granulate stock [NM2a-fresh] and 4-toothed, rimate shell [NMM]; subsp. *catadupae* H.B.B., arboreal [VW2]. *P. soror* (Fér.) appr. *peracuta* Vendyes but with 2 outer teeth scarcely joined [WSF-fresh; like Chemn. II: pl. 78, f. 3, 4]. *P. tridentina* (Fér.) with f. *browneana* (Pfr.), subarboreal [WC]; same with white radial zigzags [WC2, WWC]; appr. subsp. *chittyana* (C.B.A.), subarboreal [WWF]; subsp. *schroeteriana* (Pfr.), under rock [WV]. *P. pallescens* (C.B.A.) [NMT-fresh, NMV-fresh]. *P. anomala* (Pfr.), weak climber, incl. typical [MM2-3, MN3, NMM, NM2ab] and race "convexa" (C.B.A., preoc.) [NMM, NM1, 2c, NMV-dead]. *P. invalida* (C.B.A.), under rocks [KF and subfossil from KC2, KCC]; subsp. *simson* (Pfr.) [KHWa, KC1-

dead]; subsp. *consanguinea* (C.B.A.) + *sinuosa* (Fér. not Gmelin), fair climber [EJ2-3, EJF, KHS-subfossil, KHwB-dead]. *P. sinuata* (Müll.), weak climber, incl. big [MN3, NM excl. NMT; diam. 31.4 mm.] and smaller shells [MM3, MN1, NMT, VW2 and dead from VCM, WSF, WWF]. *P. okeniana* (Pfr.), rock-bases, incl. f. *fortis* (C.B.A.) [VW1-fresh; dark-colored, superficially like *sloaneana*] and typical lighter shells [WV; more like *atavus*]. *P. atavus* (Pfr.), rock-bases [WW]. *P. sloaneana* (Pfr.) with f. *vendryesi* (Ckll.), good climber [VCM, VF, VW]. *P. valida* (C.B.A.), good climber, incl. smallish stock [ENF], typical [EJ, EBL], intergrading with small dark globose shells [EEJ, 19 × 140 (27mm.)] and small depressed form [EEC, 15.5 × 190 (29 mm.)]. *P. strangulata* (C.B.A.), rock-bases near hilltops [EEJ, EJ3-dead].

Polydontes (Thelidomus) asper (Fér.), arboreal, incl. typical [KHw, M, NM, VF-dead, VW2-dead], paedogenetoid race [WC1, 25 × 39 mm., 3¼ wh.] and appr. *cognatus* [WV, WWF]; subsp. *cognatus* (Fér.), subarboreal [WWC].

P. (Eurycratera) jamaicensis (Gm.), deep-in-rocks (KHw-fresh, ML1, MM3-4, NM1-2-dead, VW2, WV-dead, WSF-fresh).

Cepolis (Dialeuca) nemoraloides (C.B.A.), arboreal [ML1, MM2-4, MN2]. *C. conspersula* (Pfr.), arboreal [MN1, 3, NMV]; subsp. *fuscocincta* (C.B.A.), subarboreal [NM2]; subsp. *negrilensis* H.B.B., arboreal [WC1, WWC]. *C. subconica* (C.B.A.), arboreal [EE, EJ2-3, ENF, KF, KHS-dead, KHw, ML1 (juvenile?); many color forms incl. *pulchrior* (C.B.A.)].

C. (Hemitrochus) graminicola (C.B.A.), arboreal [KC1-fresh, MM2-3].

Bulimulus guadalupensis (Brug.), weak climber, near cultivation [MM1, 3, NM2a; said to have been introduced into Mandeville a few years before; now becoming a garden pest]. *Drymaeus immaculatus* (C.B.A.), arboreal [KC1-dead, KCC-dead, MM3, MN-dead]. *Oxystyla undata* (Brug.) [MM3c-dead] and var. *jamaicensis* Pils., arboreal, especially on cacti [KC, KF].

Microceramus gossei (Pfr.), rock-faces with slight shade [MM, WWF].

Spirostemma dunkeri (Pfr.), ground at rock-bases [MN3a]. *S. ipswichense* Pils., very weak rock-climber [VWS]. *S. inusi-*

tatum (Vend.), rock-bases [ENF]. *S. cognatum* (Vend.), rock-bases [EEJb, EBL (?)]. *S. tenellum* (C.B.A.), rock-bases [VC]; subsp. *tenerum* (C.B.A.), near rock-bases [MM3a, VW2-dead]. *S. mandevillense* Pils. & Br. [MN3bc-dead].

Anoma gracilis (C.B.A.), arboreal [ML]. *A. tessellata cinerea* (C.B.A.) [VW2-dead]. *A. levis concinna* (C.B.A.) [ML1-dead]. *A. splendens* (Pfr.), arboreal [MM3-4, MN3, typical and f. *citrina* (C.B.A.); MN1, f. *rosealabris* (Ch.) and *albida* (C.B.A.)]; var. *medinae* H.B.B. [NMM, *splendens*, *citrina* and *albida* colors]. *A. striata* (C.B.A.), fair climber but aestivating on ground [NM2]; subsp. *corpulenta* (C.B.A.) [NMV-dead]. *A. nigrescens* (C.B.A.), arboreal [EEJ, typical, f. *rufilabris* (C.B.A.) and f. *leucostoma* Pils. (on same tree!); EJ1, *nigrescens*, *leucostoma* and *quadricolor* patterns]; subsp. *quadricolor* (Ch.), arboreal [EJ2, typical coloration only]; subsp. *levior* H.B.B., arboreal, [EJ3, *quadricolor*, *leucostoma* and *nigrescens* patterns; EJF, ENF-dead, all *leucostoma*].

Urocoptis (Spirocoptis) lata (C.B.A.), under rocks, incl. typical [EJ2-3, EJF] and f. *antonionis* Pils. [EEJ, EJF, ENF]; subsp. *manchionealensis* Pils. [EEC]. *U. sanguinea* (Pfr.), under rocks, incl. typical (KF, KHS) and race *cerina* (C.B.A.) [KHW]. *U. megacheila* (Ch.) and appr. *amethystina* (Ch.), under rocks [WWF].

U. (s.s.) brevis (Pfr.), fair climber even on trees, incl. typical and f. *obesa* (C.B.A.) [KC2], mainly f. *columna* (C.B.A.) [KC1] and race *abbreviata* (Desh.) [KCC]. *U. gravesii* (C.B.A.), rock-bases [VC]. *U. procera* (C.B.A.), rock-bases [ML1]. *U. dubia* (Ch.), under rocks [VF, VW1]. *U. ambigua* (C.B.A.), under rocks and rarely rock-bases, incl. typical [MM, MN1, 3], appr. *procera* [MN2], appr. *fortis* [MN1], appr. *elizabethensis* Pils. & Jarv. [NM2a, NMV] and appr. *medinae* [NM2b]; subsp. *magna* (C.B.A.), under rocks, incl. typical [NM2, NMV; and f. *fortis* (C.B.A.) [NM2b]; subsp. *medinae* H.B.B. [NMM]. *U. cylindrus* (Dillw.), under rocks, incl. small [WSF] and large [VW2] races. *U. zonata* (C.B.A.), under rocks [WV]. *U. nobilior* (C.B.A.), cliff-bases [KHW].

U. (Bactrocoptis) rosea (Pfr.), rock-bases and very weak climber [MM3, NM1-2, NMV]; subsp. *striata* (Ch.), rock-bases

[WSF]. *U. hollandi* (C.B.A.) [NM2, VW2, dead]. *U. pupaeformis* (C.B.A.) [NMMV-dead].

Brachypodella (*Geoscala*) *seminuda* (C.B.A.), rock-bases and weak climber [KC2, KF, KH, ML2]. *B. costulata* (C.B.A.), rock-bases, [ML2, MN3, NMM, VW1-2]; subsp. *savlamari* H.B.B., rock-bases and under [WC1, WWF-dead]. *B. robertsi* (C.B.A.), rock-bases [VC].

B. (Simplicervix) inornata (C.B.A.) [MM3, NMM, VCMb; dead].

B. (Mychostoma) pearmanaeana (Ch.), damp shady rock-races [WWF]. *B. alba* (C.B.A.), damp shady rock-faces, incl. quite typical [VWS], race *striata* Pils. [VCMb], race *minima* Pils. [ENF], race *eos* Pils. [EEJ, EJ3, EJF], race near *occidentalis* Pils. [NMMV] and race *striatula* (C.B.A.) [EEJ, EJ1].

B. (Apoma) chemnitziana (Fér.), fair climber even on trees [KH]. *B. gracilis* (Wood), rock-races with slight shade [ML1, MM2-3, MN1, 3, NMM, NM2, VW2].

YOUNG STAGES OF DISCUS ALTERNATUS

CHARLES H. BLAKE

The young of our land snails are rarely described, and in the case of *Discus* (*Anguispira*) *alternatus*, I was desirous of being able to distinguish it from *D. cronkhitei* var. *catskillensis* with which it is often associated. A long series of each collected at Randolph, N. H., in late August, 1933 gave the information. The four figures given were drawn with a camera lucida to the same scale. The spirals at the left represent the embryonic whorls from above. While, at a glance, the specimens are similar, they

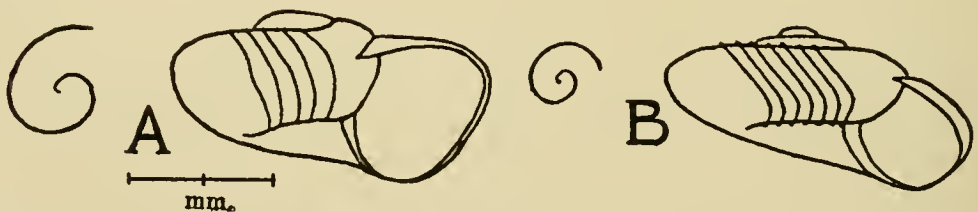


Fig. A. *Discus* (*Anguispira*) *alternatus* of 3 whorls. Fig. B. *D. cronkhitei* var. *catskillensis* of 3½ whorls.